Attachment 2-2

INPUT ASSUMPTIONS FOR ENERGY EFFICIENCY MEASURES FOR KEYSPAN MASSACHUSETTS PROGRAMS
Time Period: May 1, 2004 to April 30, 2005 (Program Year 3)

Program	Measure Name	Measure Life	Source of Measure Lives	Incremental Cost of Energy Efficiency Measures	Source of Measure Costs	Annual MMBtu Savings Per Participant or Per Unit of Installation	Source
Residential Low Income Program	This program provides insulation and weatherization services for low income residential housing in the KED service area. The Low Income Program offers over 50 energy efficiency measures, ranging from attic and wall insulatoin to measures that improve the ventilation of attics.	GDS developed estimates of the measure life for each of the measures provided by the program. Then GDS calculated a weighted average useful life for the measures in this program.	The useful life estimates (and the sources for these estimates) for each of the 55 measures are shown in Table 6-3.1 and Table 6-3.2 in the July 2004 report titled "Update of the Cost Effectiveness of the KeySpan Energy Delivery Low Income Program in Massachusetts."	GDS obtained the actual cost for each of the measures in the program from Action Energy, the contractor who delivered services for this program during the program year (May 1, 2002 to April 30, 2003).	The measure costs are shown in Table 6-2 of the July 2004 report titled "Update of the Cost Effectiveness of the KeySpan Energy Delivery Low Income Program in Massachusetts."	GDS developed estimates of annual therm savings for each of the 55 measures provided by the program. For each measure, therm savings were estimated for single-family and multi-family housing units. Weighted average annual therm savings are **338.4 therms per participant (430.5 therms per year saved for single-family units; 231.6 therms saved per year for multi-family units)**. See Table 6-7 in the July 23, 2004 Report	The therm savings estimates for each of the 55 measures are shown in Table 6-3.1 and Table 6-3.2 in the July 2004 report titled "Update of the Cost Effectiveness of the KeySpan Energy Delivery Low Income Program in Massachusetts." Average annual therm savongs per participant are shown in Table 6-7 on page 30 of this report.
Energy Star Thermostat Program	Programmable thermostat	10	Source: Honeywell Customer Service Center, phone call by Richard Spellman of GDS to Honeywell on 5/4/2000.	$50.00	KeySpan Energy Delivery Estimate, provided to GDS on February 13, 2004	4.4	Sources: 1. "Programmable Thermostats: Report to KeySpan Energy Delivery on Energy Savings and Cost Effectiveness", December 2002, prepared by GDS Associates, Inc. 2. Boston Gas Company, May 22, 1996 Filing of Proposed Changes to BGC DSM Programs, DPU-94-109, Exhibit 1, page 2
Energy Star Homes	Single Family Home	25	ACEEE report, "Selecting Targets for Market Transformation Programs, A National Analysis", August 1998.	$3,752.00	Joint Management Committee, Energy Star Homes Task D Evaluation Report, prepared by GDS for the JMC, 2003	39.4 mmbtu space heat savings; 272 kwh per year for AC savings	2000 - 2002 DSM Performance Measurement Reports, National Grid, 2000-2002
Energy Star Homes	Multi Family Home	25	ACEEE report, "Selecting Targets for Market Transformation Programs, A National Analysis", August 1998.	$1,860.00	Joint Management Committee, Energy Star Homes Task D Evaluation Report, prepared by GDS for the JMC, 2003	20.9 mmbtu space heat savings; 107 kWh per year for AC savings	2000 - 2002 DSM Performance Measurement Reports, National Grid, 2000-2002

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INPUT ASSUMPTIONS FOR ENERGY EFFICIENCY MEASURES FOR KEYSPAN MASSACHUSETTS PROGRAMS
Time Period: May 1, 2004 to April 30, 2005 (Program Year 3)

Program	Measure Name	Measure Life	Source of Measure Lives	Incremental Cost of Energy Efficiency Measures	Source of Measure Costs	Annual MMBtu Savings Per Participant or Per Unit of Installation	Source
Energy Star Windows in Massachusetts	Energy Star Windows - The measure data on incremental costs, energy savings and useful life for Energy Star windows are documented in an analysis performed by GDS for KeySpan in October 2003.	35	ACEEE report, "Selecting Targets for Market Transformation Programs, A National Analysis", August 1998, page 60. This data source was supplemented by phone interviews conducted of window manufacturers by GDS in February 2004.	$2 per square foot	"Baseline Characterization of the Residential Market for Energy Star Windows in the Northeast." The study was prepared for NEEP by Quantec LLC and Nexus Market Research in October of 2002. Table V.10 on page V-11.	1.96 mmbtu (gas heat savings) and 126 kwh (electric cooling savings) per household per year for 10 Energy Star windows, each window being 10 square feet in size	The annual Mmbtu savings per window are based on a REM/rate analysis conducted by GDS on March 12, 2004. This analysis assumes that the program participant is already in the market and shopping for windows, and due to the program, buys Energy Star windows instead of standard efficiency windows. The analysis examines savings in a small home (1700 sf), a medium size home (2200 sf), and a large home (4300 sf). Heating and cooling degree days for this analysis are based on Boston, Massachusetts.
Residential HE Heating Equipment	High Efficiency Gas Furnace (AFUE >= 90%)	20	Report for GasNetworks on Benefit/Cost Screening Results for Natural Gas Energy Efficiency Programs, March 25, 2004, Final Report, Appendix A	$400.00	Report for GasNetworks on Benefit/Cost Screening Results for Natural Gas Energy Efficiency Programs, March 25, 2004, Final Report, Appendix A	18.5 mmbtu	Report for GasNetworks on Benefit/Cost Screening Results for Natural Gas Energy Efficiency Programs, March 25, 2004, Final Report, Appendix A
Residential HE Heating Equipment	High Efficiency Gas Hot Water Boiler	20	Report for GasNetworks on Benefit/Cost Screening Results for Natural Gas Energy Efficiency Programs, March 25, 2004, Final Report, Appendix A	$500.00	Report for GasNetworks on Benefit/Cost Screening Results for Natural Gas Energy Efficiency Programs, March 25, 2004, Final Report, Appendix A	14.1 mmbtu	Report for GasNetworks on Benefit/Cost Screening Results for Natural Gas Energy Efficiency Programs, March 25, 2004, Final Report, Appendix A
Residential HE Heating Equipment	High Efficiency Gas Steam Boiler	20	Report for GasNetworks on Benefit/Cost Screening Results for Natural Gas Energy Efficiency Programs, March 25, 2004, Final Report, Appendix A	$200.00	Report for GasNetworks on Benefit/Cost Screening Results for Natural Gas Energy Efficiency Programs, March 25, 2004, Final Report, Appendix A	14.1 mmbtu	Report for GasNetworks on Benefit/Cost Screening Results for Natural Gas Energy Efficiency Programs, March 25, 2004, Final Report, Appendix A
Residential HE Heating Equipment	ECM - 92%	20	ACEEE-2003 Furnace Fan Study and NSTAR manufacturer incremental pricing comparison study.	$500.00	ACEEE-2003 Furnace Fan Study and NSTAR manufacturer incremental pricing comparison study.	18.5 mmbtu	ACEEE-2003 Furnace Fan Study and NSTAR manufacturer incremental pricing comparison study.
Residential HE Water Heating	HE Gas Water Heater	10	Lawrence Berkley Laboratory, "Baseline Data for Residential Sector and Development of Residential Forecasting Database", May 1994.				
Residential HE Water Heating	Integrated Water Heater/Furnace S	20	American Council for An Energy Efficient Economy, "Selecting Targets for Market Transformation Programs: A National Analysis", August 1998.	$1,265.00	American Council for An Energy Efficient Economy, "Integrated Space Conditioning & Water Heating Systems: One System Is Often Better Than Two".	24.5	American Council for an Energy Efficient Economy, "Integrated Space Conditioning and Water Heating Systems: One System is Often Better Than Two". December 1998
Residential HE Water Heating	Indirect Water Heater	20	Gas Networks	$300.00	GasNetworks 2003 Incremental Cost Study of Major Water Heater Manufacturers Wholesale Trade-Prices.	7.9	Annual energy savings are from a RemRATE model run Analysis prepared by Bruce Bennett of GDS. See MS Word documentation prepared by GDS, dated 2-13-2004.

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INPUT ASSUMPTIONS FOR ENERGY EFFICIENCY MEASURES FOR KEYSPAN MASSACHUSETTS PROGRAMS
Time Period: May 1, 2004 to April 30, 2005 (Program Year 3)

Program	Measure Name	Measure Life	Source of Measure Lives	Incremental Cost of Energy Efficiency Measures	Source of Measure Costs	Annual MMBtu Savings Per Participant or Per Unit of Installation	Source
Residential HE Water Heating	Tankless Natural Gas Water Heater	20	GDS Associates analysis for KeySpan Energy Delivery on tankless natural gas water heaters, December 22, 2004 (Excel worksheet documentation)	$500.00	GDS Associates analysis for KeySpan Energy Delivery on tankless natural gas water heaters, December 22, 2004 (Excel worksheet documentation)	7.4	GDS Associates analysis for KeySpan Energy Delivery on tankless natural gas water heaters, December 22, 2004 (Excel worksheet documentation)
Residential Weatherization Program	Residential insulation and air sealing measures	23.87	Keyspan Residential Weatherization Program Billing Analysis, October 2003, prepared by GDS Associates for KeySpan.	$1,750.00	Provided by Keyspan - November 7, 2003	14.87 mmbtu	Rem/RATE Analysis by Bruce Bennett of GDS Associates, on November 17, 2003
Commercial High Efficiency Heating Equipment Program	Gas Furnace	20	GasNetworks data response to the GDS Associates Team, Section 1, dated February 13, 2004, and updated subsequently	$400.00	NSTAR 2003 incremental cost study of American Standard and Carrier/Bryant furnace manufacturers wholesale trade-prices.	18.5 mmbtu	American Council for an Energy Efficient Economy, "Integrated Space Conditioning and Water Heating Systems: One System is Often Better Than Two". December 1998
Commercial High Efficiency Heating Equipment Program	Hot Water (Hydronic) Boiler	20	GasNetworks data response to the GDS Associates Team, Section 1, dated February 13, 2004, and updated subsequently	$500.00	Burnham Trade Price Book #177 effective for January 1, 2003. The incremental costs shown come directly from the price tables. No allowances have been made for preferred pricing extended to KeySpan from Burnham. These prices reflect the incremental cost of equipment at the trade level. Equipment used for analysis was Burnham Series 2 standing pilot boiler and vent damper for Standard Efficiency and Burnham Revolution for high efficiency	14.1 mmbtu	American Council for an Energy Efficient Economy, "Integrated Space Conditioning and Water Heating Systems: One System is Often Better Than Two". December 1998
Commercial High Efficiency Heating Equipment Program	Steam Boiler	20	GasNetworks data response to the GDS Associates Team, Section 1, dated February 13, 2004, and updated subsequently	$200.00	Burnham Trade Price Book #177 effective for January 1, 2003. The incremental costs shown come directly from the price tables. No allowances have been made for preferred pricing extended to KeySpan from Burnham. These prices reflect the incremental cost of equipment at the trade level. Equipment used for analysis was Burnham Independance Steam Boiler	14.1 mmbtu	American Council for an Energy Efficient Economy, "Integrated Space Conditioning and Water Heating Systems: One System is Often Better Than Two". December 1998
Commercial High Efficiency Heating Equipment Program	ECM 92%	20	ACEEE - 2003 Furnace Fan Study and NSTAR manufacturer incremental pricing comparison study.	$500.00	ACEEE - 2003 Furnace Fan Study and NSTAR manufacturer incremental pricing comparison study.	18.5 mmbtu	ACEEE - 2003 Furnace Fan Study and NSTAR manufacturer incremental pricing comparison study.
Commercial HE Water Heating Program	Indirect Fired Water Heaters	20	Gas Networks	$300.00	GasNetworks 2003 Incremental Cost Study of Major Water Heater Manufacturers Wholesale Trade-Prices.	7.9 mmbtu	American Council for an Energy Efficient Economy, "Integrated Space Conditioning and Water Heating Systems: One System is Often Better Than Two". December 1998

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INPUT ASSUMPTIONS FOR ENERGY EFFICIENCY MEASURES FOR KEYSPAN MASSACHUSETTS PROGRAMS
Time Period: May 1, 2004 to April 30, 2005 (Program Year 3)

Program	Measure Name	Measure Life	Source of Measure Lives	Incremental Cost of Energy Efficiency Measures	Source of Measure Costs	Annual MMBtu Savings Per Participant or Per Unit of Installation	Source
Commercial Energy Star Thermostat Program	Programmable thermostat	10	Source: Honeywell Customer Service Center, phone call by Richard Spellman of GDS to Honeywell on 5/4/2000.	$50.00	KeySpan Energy Delivery estimate, provided to GDS on February 13, 2004	4.4 mmbtu	Sources: 1. "Programmable Thermostats; Report to KeySpan Energy Delivery on Energy Savings and Cost Effectiveness", December 2002, prepared by GDS Associates, Inc. 2. Boston Gas Company, May 22, 1996 Filing of Proposed Changes to BGC DSM Programs, DPU-94-109, Exhibit 1, page 2
Food Service Equipment Program	1 Bay Fryer	15	ACEEE report, "Selecting Targets for Market Transformation Programs, A National Analysis", August 1998.	$600.00	This estimate was obtained by GDS from GasNetworks in a teleconference on February 13, 2004 with GasNetworks members and GDS.	36.5 mmbtu	Federal Energy Management Program (FEMP); http://www.eere.energy.gov/femp/procurement/gas_fryers.html
Food Service Equipment Program	2 Bay Fryer	15	10-14 years is the suggested life expectancy of gas fired fryers in the 2003 California Statewide Commercial Sector Natural Gas Energy Efficiency Potential Study (Final Report-Volume 2-Appendices).	$1,000.00	This estimate was obtained by GDS from GasNetworks in a teleconference on February 13, 2004 with GasNetworks members and GDS.	55.9 mmbtu	Federal Energy Management Program (FEMP); http://www.eere.energy.gov/femp/procurement/gas_fryers.html
Commercial Infrared Heating Equipment Program	Infrared Heaters	20	ACEEE report, "Selecting Targets for Market Transformation Programs, A National Analysis", August 1998.	$1,000.00	Baystate Gas Database	74.8 mmbtu	KeySpan Energy Delivery
Building Operator Certification		Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
MF/CI Load Management Pilot		Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Multifamily C&I Building Practices and Demonstration		13.6	Data from KeySpan's "Cost per therm reports", company newsletters and MA Year 2 Filing	$60,000.00	Email from John Neuhauser to GDS on November 8, 2003	2538.5 mmbtu	Data from KeySpan's "Cost per therm reports", company newsletters and MA Year 2 Filing
Trade Ally Education and Codes & Standards		Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Multifamily Housing Program		12.3	Data from KeySpan's "Cost per therm reports", company newsletters and MA Year 2 Filing	$6,900.00	Email from John Neuhauser to GDS on November 8, 2003	802.19 mmbtu	Data from KeySpan's "Cost per therm reports", company newsletters and MA Year 2 Filing
Economic Redevelopment		12.3	Data from KeySpan's "Cost per therm reports", company newsletters and MA Year 2 Filing	$78,000.00	Email from John Neuhauser to GDS on November 8, 2003	141.87 mmbtu	Data from KeySpan's "Cost per therm reports", company newsletters and MA Year 2 Filing
Commercial Energy Efficiency Program		12.3	Data from KeySpan's "Cost per therm reports", company newsletters and MA Year 2 Filing	$6,900.00	Email from John Neuhauser to GDS on November 8, 2003	802.19 mmbtu	Data from KeySpan's "Cost per therm reports", company newsletters and MA Year 2 Filing